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PHILOSOPHICAL TRANSACTIONS.

For the Months of *September, October, and November, 1678.*

The Contents.

Monsieur Cassini's Observation of the Lunar Eclips on the 29 Octob. 1678. Monsieur Gallet's Observation of the Solar Eclips on the 11 June, 1676. Extract of a Letter from Monsieur Butterfield about the making of Microscopes, &c. Extract of a Letter from Mr. Conyers about his Improvement of Sir Samuel Moreland's speaking Trumpet. An Account of two Books: I. A Discourse of the State of Health in Jamaica, &c. by Dr. Thomas Trapham. II. Catalogus Stellarum Australium: by Mr. Edmund Halley.

Clarissimo Viro

Domino Nehemiæ Greuio Regiæ Societatis à Secretis
Jo. Dominicus Cassinius S. P. D.

CUM nupera Lunæ Eclipsis à nobis hic in observatorio regio diligentissime fuerit observata, ejus exemplar ad te, Vir Clarissime, mittendum duxi regiæ Societatis Astronomis, imprimisque D. Flamstedio, communicandum. Inserviet illa Meridianorum differentia Parisios inter & Londinum exactè definienda, si vobis par cæli serenitas ejusdem observandæ opportunitatem obtulerit, &c.

Observatio Lunaræ Eclipsis die 29 Octobris 1678.

<i>Phases lunæ & macularum secundum denominationem Riccioli.</i>	<i>In observatorio Regio</i>			<i>In Collegio Claremontano.</i>		
	<i>h</i>	<i>"</i>	<i>h</i>	<i>h</i>	<i>"</i>	<i>"</i>
Incipit Umbra	6	43 30	6	43 40	6	43 54
Grimaldi lymbus sequens		45 0				45 29
Gallileus		46 0		46 0		
Finis Gallilei		47 0				
Mersenus		48 20				
Chorda Eclipsis dig. 6.				49 0		
Gassendi initium		50 50		50 50		
Gassendi medium				51 30		51 37
Schikardi initium		51 43				
II. digiti Ecliptici				52 0		
Aristarchi initium		52 50				
Aristarchi medium				53 10		53 7
Morinus						
Aristarchi & Morini finis		54 0				
Capuanus sive oculus draconis		56 0				
Digiti III.				56 30		
Chorda 9 digitorum				57		
Initium terræ pruinae & Copernici		58 54				
Copernici initium				59 10		
Copernici medium	7	0 0	7	0 0		59 30
Copernici finis	7	0 55	7	0 55		
Pitheæ initium	7	1 50	7	1 40		
Pitheæ finis		2 30				
Caput Virginis		2 45		2 40	7	3 18
Harpalus		2 55				
Tychonis initium		4 20		4 20		
Tychonis medium		5 0				5 48
Tychonis finis		5 55				
Eratosthenes		6 20				
Digiti V.				6 50		

Pro-

(1017)

	h	'	"	h	'	"	h	'	"
Promontorium inter Virginiem & Platonem	7	7	0						
Insula in ultimo sinuum mediorum		7	30						
Clara sequens Tychonem		8	31						
Digiti VI.					11	20			
Tymocharis		11	48						
Platonis initium					13	20		13	29
Platonis medium					13	40			
Platonis finis & initium Manilii		14	0						
Platonis finis					14	40			
Manilius					14	50		15	4
Finis Manilii		15	12						
Dionysii initium		17	15						
Dionysius					17	25			
Menelaus					18	10		17	59
Dionysii finis & Menelai initium		18	28					18	11
Plinius incipit	7	20	56						
Plinius					7	21	10	7	21
Picolomineus seu clara supra annulum		21	30						
Initium fracastorii seu annuli		23	0		23	5			
Initium Possidonii		23	55					24	38
Finis fracastorii		24	25						
Clara ante angulum promontorii acuti					24	45			
Angulus promontorii acuti		25	10						
Digiti IX,					26	10			
Palus Somni		28							
Initium Endimionis		29	20						
Initium Taurentii		30	30						
Angulus cornuum cum parallelo 77 15					30	40		31	16
Hermetis initium		31	5						
Finis Taurentii five capitis Serpentis		31	40						
					6 R 2			Her-	

(1018)

	h	'	"	h	'	"	h	'	"
Hermetis finis	7	32	0						
Proclus		32	20						
Lymbus maris Caspii		32	29	33	3		33	10	
Macula Inferior		33	5						
Initium Langeni		34	24						
Messala		34	40						
Finis Langeni		35	40						
Peninsula in Caspia		37	50						
Finis Caspiæ		37	50	37	50		38	18	
Macula oblonga f.		39	16						
Finis		40	41	41	0		41	41	
							<i>subtrah</i> 13'		
Initium emersionis	9	21	30	9	21	30		21	5
Grimaldus		22	44					22	10
Grimaldi finis		23	40	23	40				
Gallileus		24	35						
Mare humorum		28	15						
Schikardi medium		29	0						
Aristarchi initium		29	44					29	41
Aristarchi medium				30	20				
Aristarchus totus		30	25						
Gassendus totus		31	0						
Kepleri initium				31	40		31	6	
Keplerus totus		32	24						
Morinus		30	0						
Finis insulæ Kepleri		34	22						
Capuanus totus		34	40						
Initium terræ pruinæ		35	43						
Virgo		37	0						
Aura inter Pitheam & Ke-									
plerum				37	20				
Harpalus & clara ante Co-									
pernicum	9	37	34						
Digitus III.				37	40				
Bullialdus		38	30						
Initium Copernici				39	0		38	36	
Tychonis initium		40	0				40	22	

Co-

	(1019)								
	h	'	"	h	'	"	h	'	"
Copernicus totus	9	40	18						
Pitheas				40	30				
Tychonis medium	41	0		41	10				
Tychonis finis				42	10				
Digiti IV,				42	40				
Tymocharis totus	45	30							
Plato incipit				45	30		45	0	
Digiti V.				47	0				
Plato totus	47	0							
Plato totus				47	30				
Insula sub sinu medio	50	0							
Finis sinus medii	50	50							
Archimedes	51	37							
Digiti VI.				52	0				
Manilius				54	0		53	52	
Eretum	54	22							
Abifeldez initium	54	40							
Abifeldez finis	55	30							
Aristoteles & Eudoxus toti	56	0							
Digiti VII.				56	20				
Dionysii initium	57	12							
Menelaus	57	50		57	40		57	16	
Dionysii medium				58	30				
Menelaus totus	59	0							
Dionysius totus	10	0	0						
Digiti VIII.	10	1	30						
Ostium lacus mortis				10	2	0			
Plinius				2	15		10	1	28
Promontorium supra Dionysium	3	0							
Plinii finis Possidonius	3	40							
Promontorium acutum				5	30				
Hermes	6	0							
Digiti IX.				6	15				
Chorda umbræ 8 digitorum				9	30				
Messala	11	0							
Initium maris Caspii	13	30		12	10		11	30	
Langrenus totus	16	0							

Chorda.

(1020)

	h	'	"	h	'	"	h	'	"
Chorda sex digitorum	10			14	0				
Caspii prior finis				16	50		16	44	
Caspii alter finis	17	33		17	25				
Albedo in nrari Caspio	18	15							
Finis totalis	20	0		20	10		20	42	

Monsieur Gallet's Observation of the Solar Eclips on the 11th
of June, 1676.

Observatio Solaris Eclipsis Acta Avenione die 11. Junii
1676.

Ante Eclipsin.

DI E B'U S pracedentibus, locum aptissimum elegimus in quo aëre puro fruermur, videlicet Conventum RR. PP. Carmelitarum discalceatorum, qui respectu Civitatis Aven. ad ortum vergit & mœnia stringens aëre, sumo & vaporibus urbanis libero gaudet; in medio horti cameram obscuram tapetibus construximus, & in eâ instrumenta ad observationem necessaria ritè collocavimus.

Tubospicillum aptavimus lente oculari concavâ & objectivâ convexâ instructum, duplicem habens motum firmo sustentaculo, verticalem scilicet & horisontalem, affixam tabellam immobilem firmatis cochleis secum circumducens oculari vitro semper parallelam chartâ candidissimâ indutam, in qua solarem speciem, distantiâ tubospicilli determinatam descripsimus, hujus diametrum circulis concentricis in duodecim digitos divisimus, & quemlibet digitorum in partes sexagesimas.

Loco quadrantis qui pluribus indiget cautionibus & nimium obnoxius est vacillationibus, in hac præcipuè regione in qua ferè semper spirat Aquilo qui perpendiculum agit, Gnomonem ad captandas umbras Solis in partes 400. optimè divisum disposuimus ita ut liberè moveretur situm verticalem ope perpendiculi conservans. Tandem horologium rotatile minuta prima & secunda indicans motu penduli cum cycloide præparavimus.

Tempore